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I. INTRODUCTION

State Planning law (Government Code § 65302 (g)) requires that the Safety Element of a General Plan provide "for the protection of the community from any unreasonable risks associated with the effects of... ground failure... slope instability leading to mud slides and landslides... other geologic hazards known to the legislative body, flooding, and wildland and urban fires." In addition, the General Plan Guidelines state that "in its present form, the Safety Element aims at reducing death, injuries, property damage, and the economic and social dislocation resulting from natural hazards including: flooding... land subsidence, earthquakes, avalanches, other geologic phenomena... [and] certain types of urban and wildland fires." The law specifies that the Safety Element address the following issues to the extent that they pertain to the county:

- 1 the effects of seismically induced surface rupture, ground shaking, [and] ground failure;
- 1 the effects of slope instability;
- 1 mapping of known seismic and other geologic hazards;
- 1 flooding; and
- 1 the identification and appraisal of evacuation routes, peakload water supply requirements, and minimum road widths as they relate to identified fire and geologic hazards.

This Element outlines goals, policies and implementation measures designed to reduce the risk from locally significant natural hazards to an acceptable level. Successful implementation of this Element should reduce the loss of life, injuries, major damage to property, and the economic and social dislocation which may result from public safety hazards. Maps of known natural hazard areas are included in the **Master Environmental Assessment (MEA)**.

II. ISSUES/OPPORTUNITIES/CONSTRAINTS

Significant potential hazards to public health and safety exist in Mono County. These hazards include: avalanches; floods; fires; geologic hazards such as landslides and mudflows; seismic hazards; and volcanic eruptions. The following section briefly discusses the constraints to development posed by each of these hazards.

SEISMIC HAZARDS

1. Earthquakes

Mono County covers an area that is relatively young by geologic standards. It is located at a stress point where the earth's crustal plates are exerting opposite pressures against each other. This combination creates both "tectonic" earthquakes (e.g. land mass movement) and volcanic activity that can trigger earth shaking (e.g. magma chamber movement and lava dyke formations).

2. Fault Movement

Earthquakes are usually caused by sudden movement along geologic faults. The California Department of Conservation, Division of Mines and Geology (DMG), has evaluated potentially and recently active faults in the Antelope Valley, Benton Valley, Bridgeport Valley, East Antelope Valley, Fish Slough, Hartley Springs, Mono Lake, Round Valley, Silver Lake, Slinkard Valley, Volcanic Tablelands, West Walker River, and White Mountain areas of Mono County. Based upon these DMG studies, fault hazard zones (Alquist-Priolo Special Studies Zones) have been designated for the County (see the **MEA**). It should be noted that the illustrated surface rupture that occurred during the 1986 Chalfant Valley earthquake sequence has not been officially designated as a Special Study Zone.

3. Ground Shaking

The Seismic Safety Element prepared by Envicom in 1976 indicates that the primary seismic hazard in the County is strong to severe groundshaking generated by movement along active faults. The entire county, except for a small portion of the Sierra crest, is in an area where intense groundshaking is possible. This area has been designated as a Seismic Zone 4, the zone of greatest hazard defined in the Uniform Building Code. The recently enacted Seismic Hazards Mapping Act requires the State Department of Conservation, Division of Mines and Geology, to prepare State-wide probabilistic ground shaking maps, and establishes specific development criteria for projects situated in such seismic hazard zones.

The Long Valley-Mammoth Lakes region has experienced numerous earthquakes caused by the movement of magma below the earth's surface. The oval shaped Long Valley Caldera spans an area approximately ten by twenty miles, and is among the largest volcanoes in the continental United States. Scientists suspect that the earthquakes are caused by shifts of buried stone slabs that are made unstable as magma moves within the volcano.

4. Ground Failure

Ground failure induced by groundshaking includes liquefaction, lateral spreading, lurching, and differential settlement, all of which usually occur in soft, fine-grained, water-saturated sediments, typically found in valleys. Areas at high risk are mapped in the **MEA**. During the 1980 Mammoth Lakes earthquake sequence, ground failure was

prevalent at Little Antelope Valley, along margins of the Owens River in upper Long Valley, along the northwest margins of Lake Crowley, and along Hot Creek Meadow.

All of Mono County is situated within Seismic Zone 4, and consequently new construction in the County must comply with stringent engineering and construction requirements. Existing buildings that may be subject to seismic hazards must also comply with new requirements of the unreinforced masonry building law (Government Code § 8875). In addition, the recently enacted Seismic Hazards Mapping Act requires the State Department of Conservation, Division of Mines and Geology, to prepare State-wide liquefaction hazard maps, and establishes specific development criteria for projects situated in such seismic hazard zones.

OTHER GEOLOGIC HAZARDS

1. Rockfall, Mudflow and Landslide Hazards

Rockfalls and landslides are particularly common along the very steep slopes of the eastern scarp of the Sierra Nevada, where talus slopes provide evidence of abundant past rockfalls. During the winter and spring months, rockfalls can be lubricated with snow and ice and can become extremely fast moving and destructive. The May 1980 earthquakes triggered numerous rockfalls, especially at Convict Lake and in McGee Canyon (Bryant, 1980) and "spectacular rockfalls" were observed in Chidago Canyon and the White Mountains during the July 21, 1986 earthquake in Chalfant Valley (Smith, 1987). Landslides in areas of hilly and mountainous terrain can be triggered by groundshaking, heavy rains or human activities such as road cuts, grading, construction removal of vegetation, and changes in drainage. The recently enacted Seismic Hazards Mapping Act requires the State Department of Conservation, Division of Mines and Geology, to prepare State-wide earthquake-induced landslide hazard maps, and establishes specific development criteria for projects situated in such seismic hazard zones.

Mudflows involve very rapid downslope movement of saturated soil, sub-soil, and weathered bedrock. Large mudflows, such as the one that occurred in 1989 in the Tri-Valley area, can be destructive, particularly at the mouths of canyons. The movement of soil and debris by mudflow and other landslides over time is evident in the large alluvial fans at the edges of valley areas.

2. Subsidence

Subsidence in Mono County has been caused primarily by the tectonic movement of the earth and the movement of magma beneath the Long Valley Caldera. During the May 1980 sequence of earthquakes near Mammoth Lakes, the ground surface dropped about four inches at several locations near the Hilton Creek fault, and up to 12 inches of vertical offset occurred along the Mammoth-June Lakes Airport fault zone. Magma movement in the Long Valley Caldera has caused bulging of the resurgent dome in the Casa Diablo area by almost 20 inches since 1979.

No subsidence has been observed in the County due to fluid withdrawals, or hydrocompaction of water impoundment. All major groundwater basins (see the **MEA**) however have been identified by the Division of Mines and Geology as areas where subsidence could occur as a result of excessive groundwater pumping.

3. Volcanic Hazards

Evidence of volcanic activity in Mono County extends from Black Point north of Mono Lake to the deposits of Bishop Tuff in southern Mono County. The source of volcanic

risk in Mono County is the Inyo-Mono crater chain and the Long Valley caldera. Vents in the Inyo-Mono crater chain have erupted about every 500 years over the last 2,000 to 3,000 years, with the most recent eruption occurring approximately 500 years ago. Eruptions in the Long Valley Caldera have occurred approximately every 2,000 years over the last 7,000 years. A study funded by the National Science Foundation in 1987 estimates an annual probability of a violent eruption within hazard zone I(a) at 1 in 1,000. The volcanic hazards mapped in the **MEA** estimate the extent of explosive blasts, hot flowing material, and ash flow.

FLOODING

1. Flood Hazards

The Federal Emergency Management Agency (FEMA) has prepared Flood Insurance Rate Maps illustrating 100 year flood hazard areas for several streams. Floods in these areas have a one percent probability of occurring in any given year. Such flooding could result in the loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief. Flood losses may be increased by the cumulative effect of obstructions in flood hazard areas which increase flood heights and velocities, and when inadequately anchored, can damage downstream uses.

Flooding is a potential risk to private properties situated in the vicinity of several waterways within the County. The community areas most likely to be impacted by a 100-year flood include properties along the East and West Walker River, Reversed Creek, and Spring Canyon Creek. Areas in these high hazard zones include Antelope Valley, Bridgeport Valley, the June Lake Loop, and the Tri-Valley area. The most recent serious flooding in the County occurred in the Tri-Valley area during the summer of 1989, when rains carried heavy sediment loads from the alluvial fan slopes of the White Mountains into community and agricultural areas.

The FEMA maps lack information regarding the base flood elevation, and are therefore of limited use for local development review and planning purposes. The maps also lack information concerning local alluvial fan and mudflow hazards. There is a significant need to update the flood hazard maps of community areas where development pressures are the greatest, particularly those for the Antelope Valley, June Lake, and the Tri-Valley areas.

2. Dam Failure

The Mono County Multi-Hazard Functional Plan (MHFP) prepared by the Office of Emergency Services indicates that 18 dams are located in Mono County. The Lower and Upper Twin Lakes, Lundy Lake, Long Valley/Crowley Lake, Rush Creek Meadows, and Saddlebag dams are identified as presenting some threat to downstream developed areas if dam failure were to occur. Regarding the risk of dam failure in Mono County, the MHFP concludes that "Mono County's dams are not major threats".

The **MEA** illustrates the areas subject to flood hazards and dam failure inundation, as well as the area that would be inundated if the dam at Crowley Lake were raised an additional 20 feet to provide an increased storage area.

3. Seiches

Seiches are earthquake-generated waves within enclosed or restricted bodies of water such as lakes and reservoirs. Similar to the sloshing of water in a bowl or a bucket when it is shaken or jarred, seiches can overtop dams and pose a hazard to people and

property within their reach. There is no available evidence that seiches have occurred in Mono County lakes and reservoirs.

FIRE

1. Wildland Fires

The combination of highly flammable fuel, long dry summers and steep slopes creates a significant natural hazard of wildland fire potential in most of Mono County. Wildland fires can result in death, injury, economic loss and significant public investment in fire fighting efforts. Woodlands and other natural vegetation can be destroyed resulting in a loss of timber, wildlife habitat, scenic quality and recreational resources. Soil erosion, sedimentation of fisheries and reservoirs, and downstream flooding can also result.

Fire hazard severity has been mapped for most of the privately owned land in Mono County by the California Department of Forestry (CDF). All areas except the Bridgeport Valley and Antelope Valley have been rated as having a very high fire hazard. The Bridgeport Valley has a moderate fire hazard rating, and the Antelope Valley has not been rated. With the exception of the Antelope Valley, all privately owned lands in Mono County are within the State Responsibility Area (SRA).

Much of the privately owned land in the county is located outside of fire protection districts, and therefore lacks formal structural fire protection service. Due to the property tax revenue structure established in Proposition 13, it is difficult for fire districts to receive additional property tax revenues for annexation of these unserved areas, or for new fire districts to be formed. New funding sources, such as special assessments, have been established in several fire districts as an alternative to property tax funding.

The State of California recently adopted wildland protection regulations for future development in the SRA; Mono County has adopted a local ordinance that has the same practical effect as the CDF regulations.

These firesafe regulations address requirements for adequate clearance of flammable vegetation around individual structures and clusters of structures to prevent the spread of fire from the wildland to structures, and from structures to wildlands. Minimum water capacities for fire protection purposes are established in the regulations to ensure the availability of water for fire suppression purposes. Adequate road widths and load capacities are required to ensure ready movement of fire engines, bulldozer-transport units and other heavy firefighting equipment to developed areas of the County; the Mono County Public Works Department has also established similar road improvement standards for new development.

2. Structural Fires

The eleven fire protection districts in the county provide fire prevention services through such activities as education and development review. The districts also provide varying levels of fire suppression and emergency medical response services to community areas. The Community Services Section of the **MEA** provides a summary description of fire district service levels and capabilities, including the general capabilities and availability of local community water service in the County..

AVALANCHE

1. Avalanche Hazards

Although avalanches in Mono County occur primarily on National Forests in the Sierra Nevada backcountry, some avalanche hazards present a significant risk to community areas. Both property damage (approximately 40 properties since 1969) and loss of life have resulted from avalanches in Mono County--most recently during the winter of 1985-86. Community areas influenced by avalanche hazards include Swauger Creek, Twin Lakes, Virginia Lake, Lundy Lake, June Lake, Long Valley/McGee Creek, and Wheeler Crest. In addition, roadway sections threatened by potential avalanches include portions of Lower Rock Creek Road; Highway 395 at Long Valley, Wilson Butte, and just north of Lee Vining; Highway 158 entering the June Lake Loop; and several county roads entering eastern slope community areas.

2. Avalanche Studies and Maps

In accordance with State law, avalanche hazard maps have been developed to illustrate areas of known avalanche occurrences. These maps were prepared by five Board-appointed avalanche advisory committees consisting of local residents and landowners. All pertinent information concerning the work of the five appointed committees and the avalanche policy formulation process--including committee recommendations and position papers--is on file in the County Planning Department. Other County avalanche hazard studies prepared by avalanche consultants and which project potential avalanche runout areas, are also on file in the Planning Department.

3. Avalanche Monitoring and Evacuation

A backcountry avalanche monitoring program is operated by the Inyo National Forest out of Mammoth Mountain facilities. This monitoring program issues avalanche hazard warnings during periods of high avalanche danger in the backcountry. The County Sheriff's Department keeps in contact with the Forest Service and should a hazardous situation develop, personally advises those within the hazard-prone area of the critical nature of the hazard.

EVACUATION ROUTES

The Mono County Multi-Hazard Functional Plan indicates that major routes (State and County), immediate access routes to community areas, and internal community street systems could be subject to closure by avalanches, landslides, snow and fog white-outs, and flooding. In addition, imminent hazards such as high avalanche hazard conditions could prohibit travel even along open access routes. The developed areas of Wheeler Crest, June Lake, Lundy Lake, Virginia Lakes and Twin Lakes all have only one access.

The Mono County Multi-Hazard Functional Plan, which includes the Mono County Caldera Initial Response Plan, sets forth site specific evacuation plans as well as general evacuation procedures for various emergency situations. The Wheeler Crest and June Lake Area Plans also call for development of additional access roads into the community areas.

III. POLICIES

GOAL I

Avoid the exposure of people and improvements to unreasonable risks of damage or injury from earthquakes and other geologic hazards.

OBJECTIVE A

Direct development to occur in a manner that reduces the risks of damage and injury from known earthquake and geologic hazards to acceptable levels.

Policy 1: In order to mitigate risk from seismic hazards such as surface fault-rupture, and other geologic hazards, regulate development near active faults, seismic hazard zones and other geologic hazards consistent with the provisions of the Alquist-Priolo Special Studies Zone Act and the Seismic Hazard Mapping Act.

Action 1.1: Applicable development proposals in Alquist-Priolo fault hazard zones, seismic hazard zones, or other known geologic hazard areas, shall provide a geologic or geotechnical report prior to project approval. The report shall:

- a) be funded by the applicant;
- b) be prepared by a registered geologist or certified engineering geologist;
- c) if a fault hazard, locate existing faults, evaluate their historic activity, and determine the level of risk they present to the proposed development;
- c) if another geologic hazard, including a seismic hazard other than a fault hazard, locate site-specific geologic/seismic hazards affecting the project, identify areas containing geologic/seismic hazards that could adversely affect the site in the event of an earthquake or other geologic episode, and determine the level of risk they present to the proposed development;
- d) recommend measures to reduce risk to acceptable levels; and
- e) be prepared in sufficient detail to meet the criteria and policies of the State Mining and Geology Board, and to allow for review by the County's consulting geologist (see also Action 1.3).

Mitigation measures shall be included in the project plans and specifications and shall be made a condition of approval for the project.

Action 1.2: Require the scope of investigation for geologic and geotechnical reports to be commensurate with the complexity and exposure to risk of the proposed project. As an example, reports for hospitals, multi-story buildings, and other critical, sensitive, or high intensity structures should be prepared in greater detail than those for lower density wood frame structures.

Action 1.3: Retain a qualified consulting geologist to review geologic/geotechnical studies prepared in accordance with Action 1.1. The consulting geologist shall evaluate the adequacy of the report, interpret or set standards where they are unclear, and advise the County of the report's acceptability. Project proponents shall be required to fund the costs associated with the County's consulting geologist's review of project geologic hazard

studies. The County's consulting geologist shall be retained in conformance with the Mono County Environmental Handbook.

Action 1.4: During the initial project review process, encourage applicants to design or redesign their projects as necessary to avoid unreasonable risks from surface fault rupture and other geologic/seismic hazards. Work with the State Geologist to exempt from special geologic study requirements those projects that will clearly not be impacted by fault rupture or other geologic/seismic hazards.

Action 1.5: Deny applications for planning permits where geologic studies provide substantial evidence that the proposed project will be exposed to unreasonable risks from surface faulting, fault creep or other seismic hazards. Projects that include measures to reduce risks to acceptable levels may be approved. Consistent with Seismic Hazard Mapping Regulations, "acceptable level" means a reasonable assurance of public safety, although structural integrity and continued functionality are not ensured.

Action 1.6: Work with the State Geologist to address development proposals in areas where recent geologic/seismic episodes have occurred, but where special study zones or seismic zones have yet to be delineated.

Action 1.7: Require that all applicants for County permits in delineated special study zones or geologic/seismic hazard zones be notified of the area's potential for surface displacement or other seismic/geologic hazards, and that they be referred to this Element, support documents, seismic hazard zone maps (when available) and the Alquist-Priolo maps on file in the County Planning Department for further information.

Policy 2: Identify and mitigate seismic /geologic hazards to existing structures, and ensure that new construction is designed to withstand seismic/geologic events.

Action 2.1: The Building Department will identify potentially hazardous buildings in accordance with the Unreinforced Masonry Building Law (Government Code Section 8875).

Action 2.2: The Building Department will develop and implement a mitigation program for potentially hazardous buildings in accordance with the Unreinforced Masonry Building Law.

Action 2.3: The Building Department will continue to require new construction to comply with the engineering and design requirements of Seismic Zone 4.

Action 2.4: The Building Department may require geotechnical studies as necessary to comply with the Uniform Building Code.

Policy 3: Identify areas of seismic and geologic hazards.

Action 3.1: Utilize historical data and geotechnical studies to designate areas of geologic hazards.

Action 3.2: Work with the Federal Emergency Management Agency, the State Department of Water Resources, and other appropriate agencies to designate alluvial fans and mudflow areas on Flood Insurance Rate Maps; the Tri-Valley area should be a study priority.

Action 3.3: Coordinate with the United States Geologic Service and other research concerns in volcanic hazard research and monitoring activities for the Long Valley Caldera and the Inyo-Mono Crater Chain.

Action 3.4: Request the Division of Mines and Geology to establish Mono County as a priority area for mapping areas of ground shaking, liquefaction, and earthquake-induced landslides in accordance with Seismic Hazard Mapping Regulations.

Policy 4: Limit the intensity of development in seismic and other geologic hazard areas.

Action 4.1: Designate known hazardous areas for low intensity uses in the land use element; assign low intensity zoning for such areas.

Action 4.2: Facilitate land trades or purchases that result in placing properties subject to major geologic hazards into federal ownership or into the ownership of land conservation organizations, for permanent open space use.

Action 4.3: Through the permit process, including site plan review, direct development to avoid locating in hazardous areas.

Policy 5: Regulate land uses that may increase the potential for natural hazards, such as activities which disturb vegetative cover on steep slopes, or which could divert hazard flows towards down-gradient development.

Action 5.1: Consider enacting a hillside development ordinance to address requirements for evaluation of landslide, rockfall, and other geologic hazards on hillsides.

Action 5.2: Prior to site development, require geotechnical evaluation of the potential for landslides and mudslides in applicable areas.

Action 5.3: Amend the zoning code to include maximum site disturbance restrictions in appropriate zoning districts.

GOAL II

Avoid exposure of people and improvements to unreasonable risks of damage or injury from flood and fire hazards.

OBJECTIVE A

Regulate development in flood hazard areas in a manner that protects people and property from unreasonable risks of damage due to flooding.

Policy 1: Regulate the placement of new structures in the 100-year flood plain.

Action 1.1: Work with the Federal Emergency Management Agency, the State Department of Water Resources, and other appropriate agencies to update flood hazard studies for developing areas of the County. The June Lake, Walker-Coleville-Topaz, and Tri-Valley areas should be study priorities.

Action 1.2: Continue to participate in the National Flood Insurance Program by enforcing and updating as necessary the provisions of the Flood Plain Combining District of the Mono County Zoning and Development Code (Chapter 19.25).

Action 1.3: In accordance with the stream setback requirements of the Mono County Zoning and Development Code, require new development to set back adequately from surface waters for flood protection purposes. Any deviations from the stream setback requirements within the 100 year floodplain should be reviewed by the County Floodplain Administrator prior to permit issuance.

Action 1.4: Future development projects with the potential to cause substantial flooding, erosion, or siltation shall provide an analysis of the potential impacts prior to project approval. The analysis shall:

- a) be funded by the applicant;
- b) be prepared by a registered geologist or civil engineer;
- c) identify the nature of the hazard, and assess the impacts of the development on downstream development and resources; and
- d) recommend alternatives and/or mitigation measures to mitigate potential impacts to downstream resources to a level of non-significance, unless a statement of overriding considerations is made through the EIR process.

Mitigation measures shall be included in the project plans and specifications and shall be made a condition of approval for the project.

Action 1.5: Limit the intensity of development within the 100 year floodplain in the Land Use Element.

Action 1.6: Continue to implement Mono County Code Chapter 13.08, Land Clearing, Earthwork and Drainage Facilities, and update as necessary.

OBJECTIVE B

Regulate development in a manner that protects people and property from unreasonable risks of wildland and structural fire hazards.

Policy 1: Require adequate structural fire protection for new development projects.

Action 1.1: Development projects shall demonstrate the availability of adequate structural fire protection prior to or as a condition of permit issuance. Applicants shall provide either a will-serve letter from the applicable fire protection district or, if not within an existing fire district sphere of influence, a

fire protection plan. The fire protection plan shall be part of the development application and shall identify the nature of the local fire hazard, assess the risk of wildland and structural fires presented by the project, and specify measures for detecting and responding to fires on the project site throughout all phases of the proposed development. Projects lacking adequate fire protection shall not be approved.

Action 1.2: Require subdivisions and residential, commercial, industrial, and resource extraction development projects, or similar high intensity proposals, to demonstrate the availability of adequate structural fire protection in accordance with Action 1.1. Project approvals shall include a finding that adequate structural fire protection is or will be available.

Action 1.3: Require development projects within the sphere of influence of a fire protection district to annex into the district.

Action 1.4: Require the formation of a fire protection entity for specific plan areas that include residential uses, unless the area is within the Sphere of Influence of an existing local fire protection agency

Policy 2: Require new construction to comply with minimum wildland fire safe standards, including those established for emergency access, signing and building numbering, private water supply reserves for fire use, and vegetation modification, as contained in the County's Fire Safe Ordinance.

Action 2.1: Work with the California Department of Forestry to implement the County's Fire Safe Ordinance.

Action 2.2: Consider adopting the Uniform Fire Code.

Action 2.3: Request the Mono County Fire Services Association, which consists of the eleven Fire Districts in the County, to review and comment on fire protection plans and major development proposals situated outside existing fire district spheres of influence.

Policy 3: Mitigate fire hazards through the environmental and project review process.

Action 3.1: Consider the severity of natural fire hazards, the potential for damage from wildland and structural fire, the adequacy of fire protection, appropriate project modifications and mitigation measures consistent with this Element in the review of projects.

Action 3.2: Refer project proposals to local fire protection districts and the California Department of Forestry for review and comment.

Action 3.3: Require on-site detection and suppression, such as automatic sprinkler systems, where adequate structural fire protection services are not available.

Action 3.4: Regulate the intensity of development in areas lacking adequate structural fire protection. Residential subdivisions proposing parcels of less

than forty acres should not be permitted in areas lacking structural fire protection.

Policy 4: Assist fire protection districts in securing adequate funding for capital facilities and ongoing operations to serve new development.

Action 4.1: Assist fire protection districts in the establishment and implementation of appropriate funding sources - such as fees, exactions, charges, and assessments - to enable existing fire districts to annex appropriate areas, and to enable new fire protection districts to be formed.

Action 4.2 Continue to allocate "unmet needs fund" through the augmentation hearing process to assist fire districts, as well as other appropriate special districts, in meeting unmet needs.

GOAL III

Protect local communities from unreasonable risks associated with avalanche hazards.

OBJECTIVE A

Limit development that attracts concentrations of people in historical avalanche paths (Conditional Development Areas) during the avalanche season.

Policy 1: Prohibit new subdivisions, new winter commercial uses, and multi-family developments in conditional development areas unless proper mitigation is provided. A Conditional Development Area¹ denotes private property that has previously experienced avalanche activity.

Action 1.1: Prior to approving new development, other than single family residential, in conditional development areas or within the Twin Lakes Avalanche Influence Area, the Planning Commission or Board of Supervisors shall either find:

- a) On the basis of a site specific study by a qualified snow scientist, that the site is not within a potential avalanche hazard; or
- b) That the project has been designed by a registered civil engineer to withstand potential avalanche impact, or other appropriate structural mitigation measures have been incorporated into the project.
- c) Unless otherwise mitigated, all building sites created through new subdivisions shall be identified and located outside avalanche areas.

¹Conditional Development Areas have been identified by local avalanche advisory committees appointed by the Board of Supervisors. In some communities where insufficient historical data exists, the high hazard zones identified in prior avalanche studies (i.e. Wilson, Beck, or Mears/Whitmore) have supplemented available historical information in defining the Conditional Development Area.

Action 1.2: Impose subdivision and use restrictions in conditional development areas through future rezoning and use permit conditions.

Policy 2: Promote seasonal, rather than year-round, land uses in conditional development areas.

Action 2.1: Require new commercial development projects in conditional development areas to discontinue operations during the avalanche season, unless mitigated as specified in Action 1.1. The avalanche season is considered to run from November 1 to April 15 of the following calendar year. Upon application, the Board of Supervisors may change the foregoing dates for specific areas if it finds that public health and safety will not be affected.

Action 2.2: Encourage the use of seasonal trailers in conditional development areas where such use does not conflict with local zoning or private restrictive covenants.

Policy 3: Facilitate land trades or purchases that result in placing properties, which on the basis of prior studies may be impacted by avalanches, into federal ownership or into the ownership of land conservation groups, for permanent open space use.

Action 3.1: Survey landowners who own properties which, on the basis of prior studies, may be impacted by avalanches, for interest in land trades or purchases.

Action 3.2: Initiate land trade/purchase discussions between landowners and appropriate federal, state or county agencies, or land conservation groups.

Action 3.3: Request applicable federal or state agencies to assign high priority land acquisition status to private lands in areas which, on the basis of prior studies, may be impacted by avalanches.

Policy 4: Maintain and update historical avalanche data.

Action 4.1: Appropriate County agencies shall continue to compile avalanche data.

Action 4.2: The historical maps contained in the **MEA** shall be revised and updated as necessary to reflect the run-out boundaries of actual avalanches; maps shall be compiled by the Planning Department and approved by the Board of Supervisors.

Action 4.3: Where the boundary of an actual avalanche area is in question, require site specific analysis of the historical avalanche impact to the parcel prior to issuance of any county permits, other than Building Permits for single family residential development. Such analysis should be conducted by a qualified snow scientist, and the conclusions of the analysis should be incorporated into this Element.

OBJECTIVE B

Inform residents and visitors of the potential avalanche hazards in or nearby local communities.

Policy 1: Inform affected persons of potential avalanche hazards in the area during the permit process and during transfer of property ownership.

Action 1.1: Designate community areas containing private lands influenced by historic avalanche path as "Avalanche Influence Areas" in this element. The Avalanche Influence Area designation shall define community areas in which residents and visitors should be notified of where potential avalanche hazards exist in the vicinity.

Action 1.2: Designate historical avalanche paths as "conditional development zones" in this Element.

Action 1.3: Require that all applicants for County permits in avalanche influence areas be notified of the area's potential avalanche hazards, and require that they be referred to this Element and avalanche documents on file in the County Planning Department for further information.

Action 1.4 In accordance with state law, sellers of property will notify buyer/transferees of potential avalanche and seismic hazards affecting subject property.

Policy 2: Inform visitors of potential avalanche hazards by posting notification signs on roadways entering avalanche areas as designated by the Board of Supervisors.

Action 2.1 Continue to post signs on local roads warning of avalanche potential.

Action 2.2: Require that new roads constructed in areas which may be impacted by avalanches be properly signed to notify of potential avalanche hazards.

OBJECTIVE C

Plan for and provide emergency services in the event of avalanches.

Policy 1: Initiate avalanche warning procedures during hazard periods in accordance with procedures adopted by the Sheriff.

Policy 2: Provide emergency access to avalanche influence areas where feasible.

Action 2.1: Evaluate potential emergency access routes for avalanche influence areas in the County Circulation Element.

Action 2.2: Seek state or federal funding for emergency access road construction in avalanche influence areas.

Policy 3: Provide snow removal services to county roads only during periods of acceptable avalanche risks.

Action 3.1: The Director of Public Works will utilize broad discretion in determining when roads should be plowed.

Policy 4: Assist in providing local emergency housing facilities.

Action 4.1: Identify community facilities appropriate for emergency housing purposes in the Housing Element.

OBJECTIVE D

Secure cooperation from the U.S. Forest Service and Caltrans in mitigating local avalanche hazards.

Policy 1: Seek cooperation from the U.S. Forest Service in mitigating avalanche hazards which originate on land managed by the Forest Service and which threaten private property.

Action 1.1: Continue to promote and encourage local and/or regional Forest Service offices to:

- 1) Expand the backcountry avalanche forecasting program to include threatened community areas;
- 2) Structurally mitigate (i.e. supporting structures, deflecting berms, retarding mounds, catching dams, snow fences, etc.) avalanche hazards threatening community areas; and
- 3) Initiate land exchanges with willing property owners in avalanche hazard areas.

Policy 2: Seek cooperation from Caltrans in mitigating avalanche hazards to local state highways.

Action 2.1: Promote and encourage Caltrans' assistance in funding local avalanche forecasting programs.

Action 2.2: Support Caltrans efforts to expand avalanche mitigation efforts in the June Lake community. Implement policies under Objective K of the Circulation Element of the June Lake Area Plan.

Action 2.3: Encourage Caltrans to post avalanche warning signs along potential avalanche sections of Highway 395, such as in the Long Valley area, the Wilson Butte area, and the area north of Lee Vining during the avalanche season.

GOAL IV

Reduce the risks from natural hazards by increasing public awareness of the natural hazards in Mono County and providing an emergency access and response system.

OBJECTIVE A

Inform the public as to the nature and extent of natural hazards in Mono County.

Policy 1: Inform affected persons of potential seismic, geologic, volcanic, fire, flood, avalanche and other natural hazards in the area, during the County permit process and during the transfer of property.

Action 1.1: Prior to issuing planning or building permits in hazardous areas, refer the applicant to this element, and support documents and studies on file in the County Planning Department for further information concerning potential hazards. In order to ensure that the applicant has been notified of potential hazards, the applicant may be required to sign a statement recognizing that potential hazards exist in the area.

Action 1.2: In accordance with state law, sellers of property will notify buyer/transferees of potential hazards affecting subject property.

OBJECTIVE B

Plan for and provide emergency services in the event of natural hazard events.

Policy 1: Implement the Mono County Multi-Hazard Functional Plan (MHFP) prepared by the Office of Emergency Services

OBJECTIVE C

Provide for safe ingress and egress of emergency vehicles and equipment.

Policy 1: Review development proposals to ensure the provision of primary and secondary access.

Action 1.1: Refer applications for planning and building permits to the California Department of Forestry and local fire protection districts for review and comment regarding, among other items, emergency access considerations.

Action 1.2: The Public Works Department shall continue to review the adequacy of primary and secondary access for development projects on a case-by-case basis.

Policy 2: All projects using hazardous materials or generating hazardous waste shall conform to the requirements of the County's Hazardous Waste Management Element for transportation, storage, and disposal.

Policy 3: Transportation, storage, and use of explosive materials shall comply with applicable County, State, and Federal permit requirements.